AN2051

Multilayer Chip Antenna for

2.4GHz Wireless Communication

AN2051 Multilayer Chip Antenna

◆ Features

- Light weight and low profile 5.05mm(L)X2.0mm(W)X1.07mm(H)
- Omni-directional in azimuth
- Lead (Pb) Free

◆ Applications

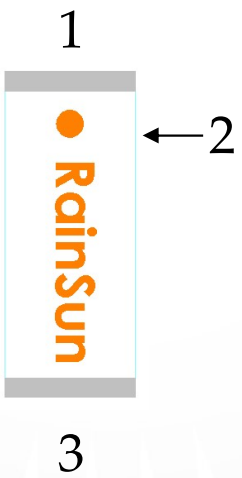
- 2.4GHz wireless communications
- 2.4GHz Modules
- Bluetooth System
- 802.11b/g Wireless LAN System

Specifications

Center frequency	2.45GHz
Peak gain	0.5dBi
Operation temperature	-40 ~ +85 ˚C
Storage temperature	-40 ~ +85 ˚C
VSWR	2.0 (max)
Input Impedance	50 Ohm
Power handling	2W (max)
Bandwidth	110MHz
Azimuth beamwidth	Omni-directional
Polarization	Linear

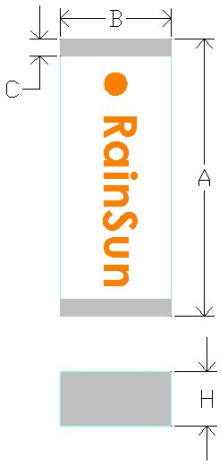
Pin configuration

Top view



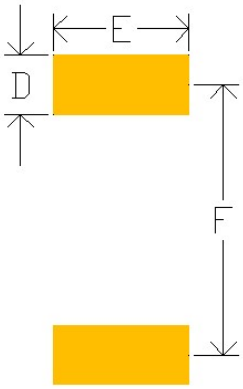
Pin No	Pin assignment
1	Feed termination
2	Feed point mark
3	Solder termination

Dimensions



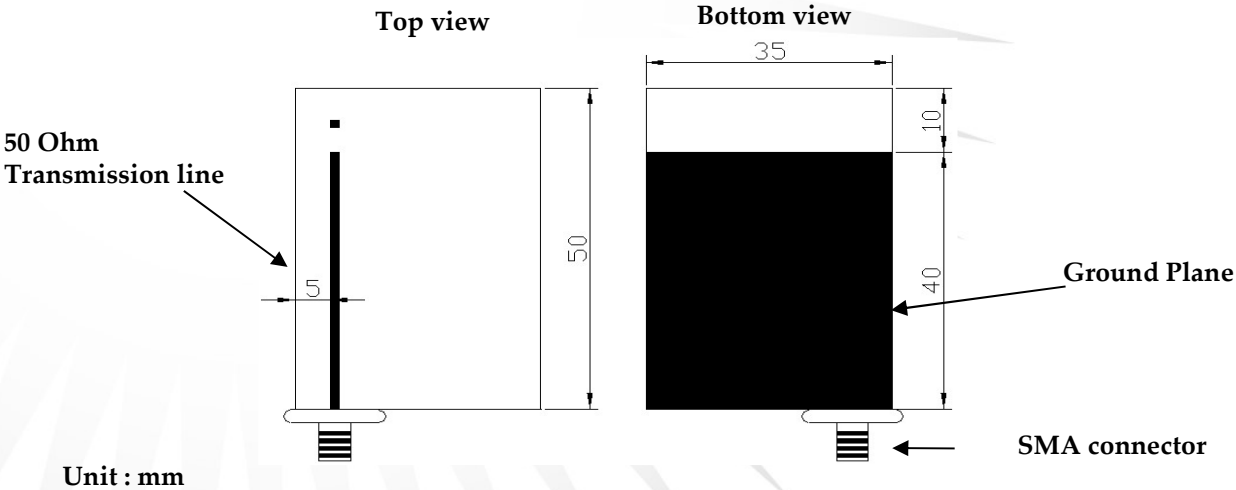
Symbol	Dimensions (mm)
A	5.05 ± 0.10
B	2.00 ± 0.10
C	0.50 ± 0.05
H	1.07 ± 0.20

PCB Foot Print



Symbol	Dimensions(mm)
D	1.5
E	2.0
F	5.1

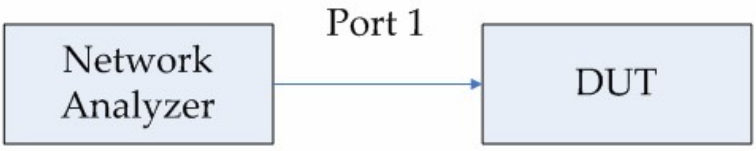
Recommended Test Board Pattern



Unit : mm
Board thickness : 0.6mm
Board material : FR4

Fig-1

Testing Setup



Measurement

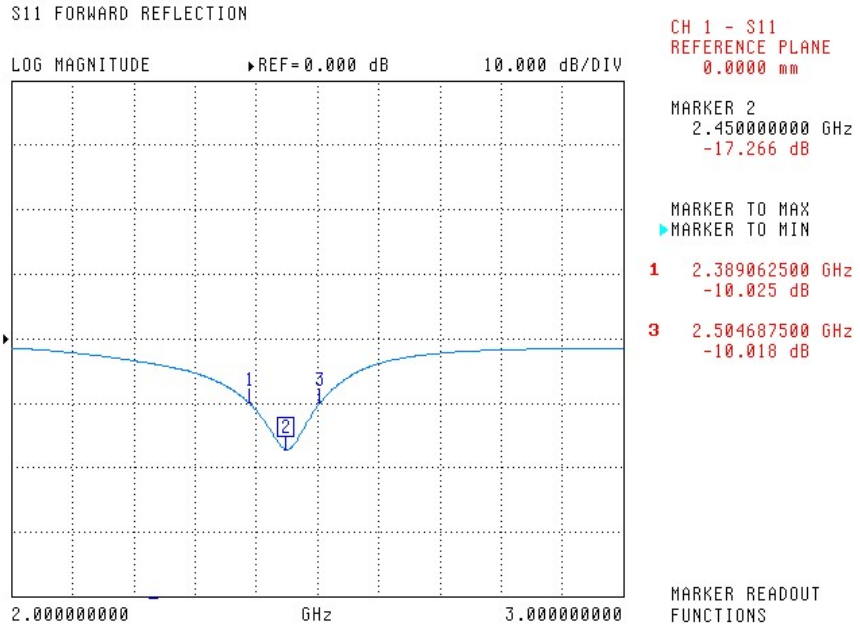
Testing Instrument:
Anritsu 37369C VNA(Vector Network Analyzer)

VNA calibrate with 1 path reflection only calibration sequence on test board feed point.

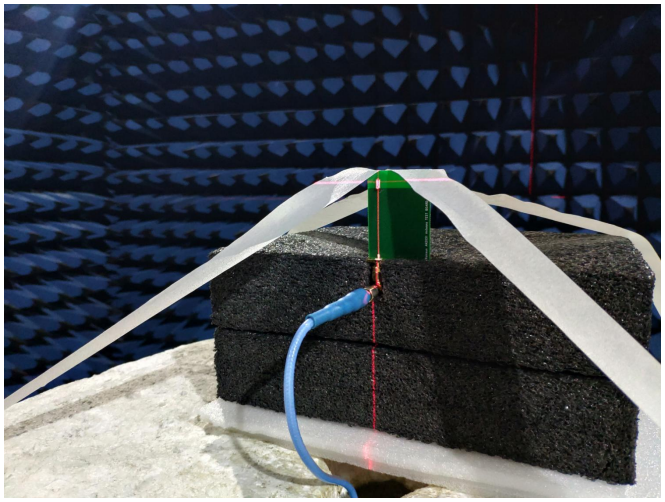
The test board dimension and it's layout is the same as Fig-1.

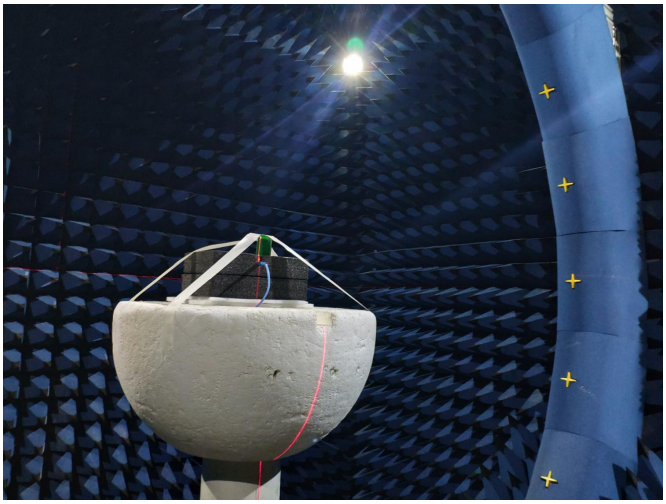
Typical Electrical Characteristics

Return loss



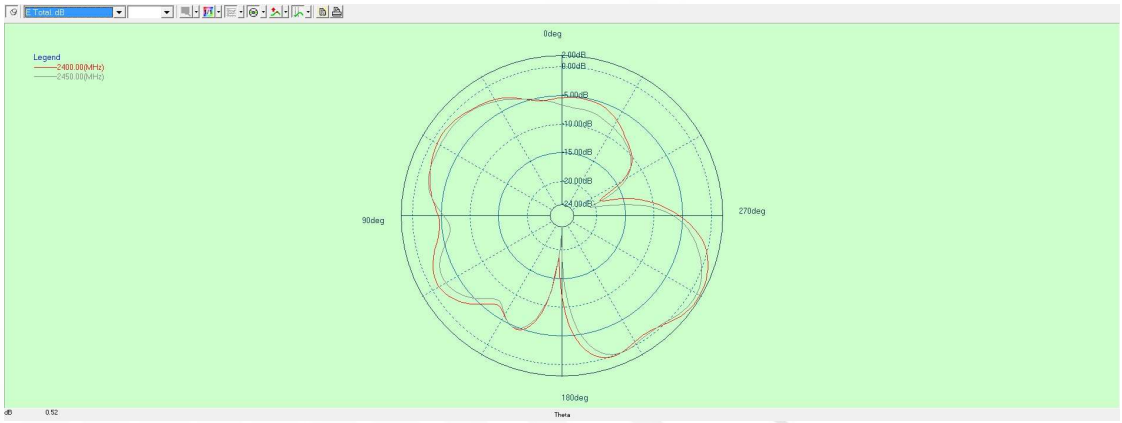
Test setting



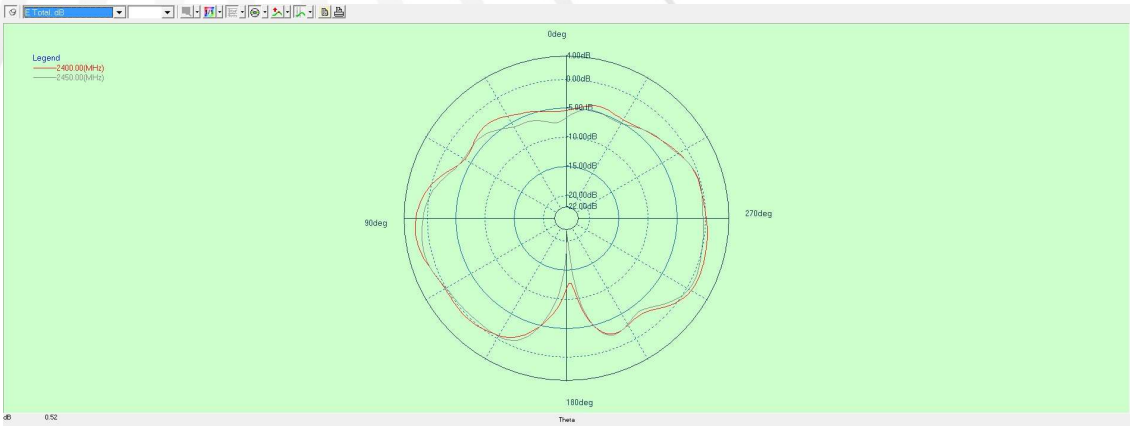


Typical Radiation Patterns

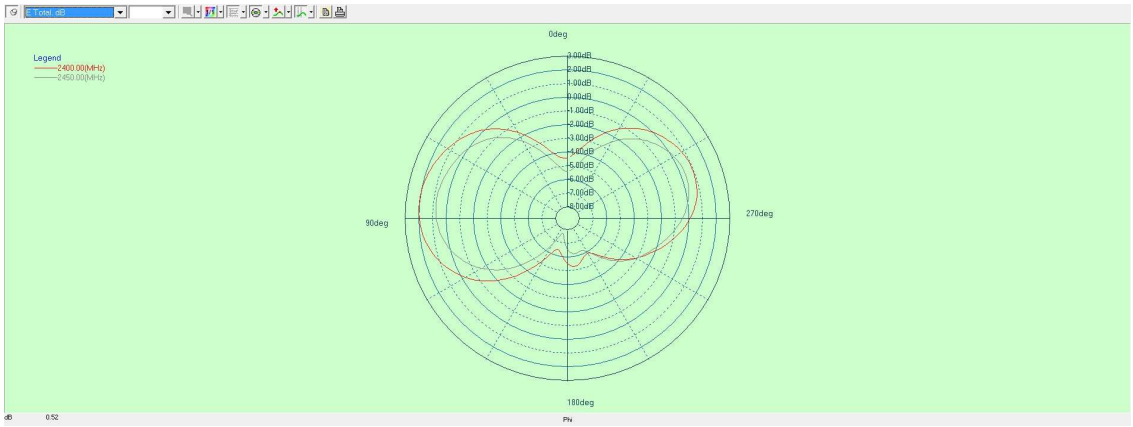
2.45 GHz Phi=0



2.45 GHz Phi=90

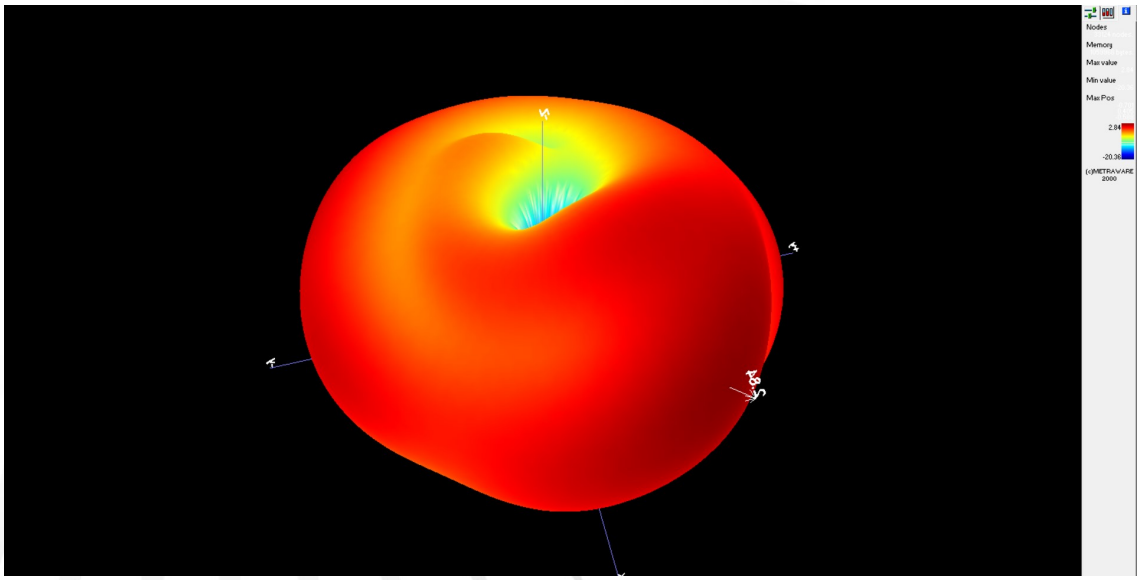


2.45 GHz Theta=90

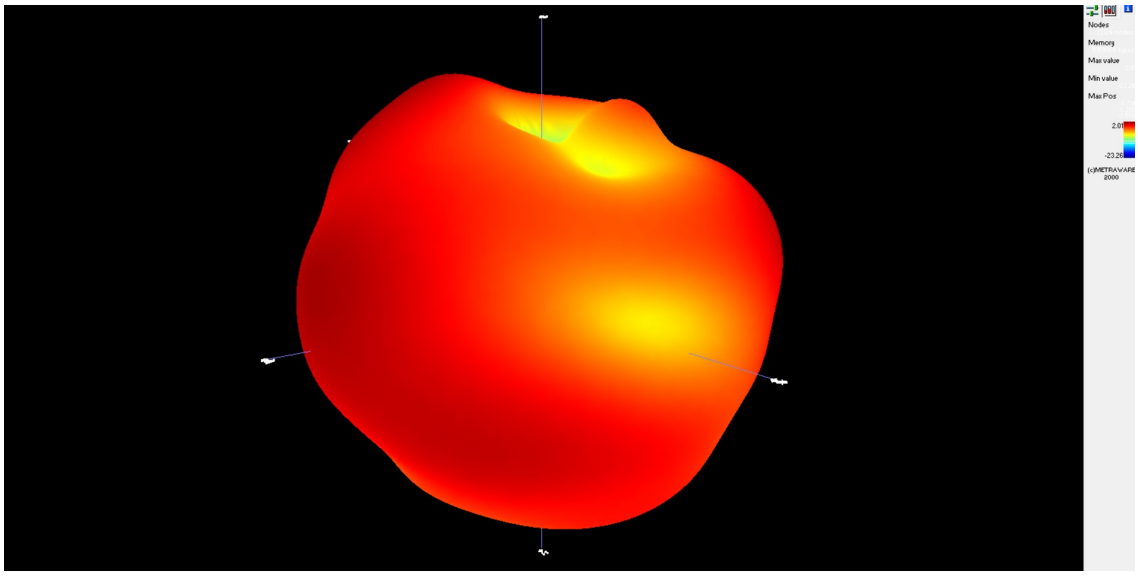


Typical Radiation Patterns

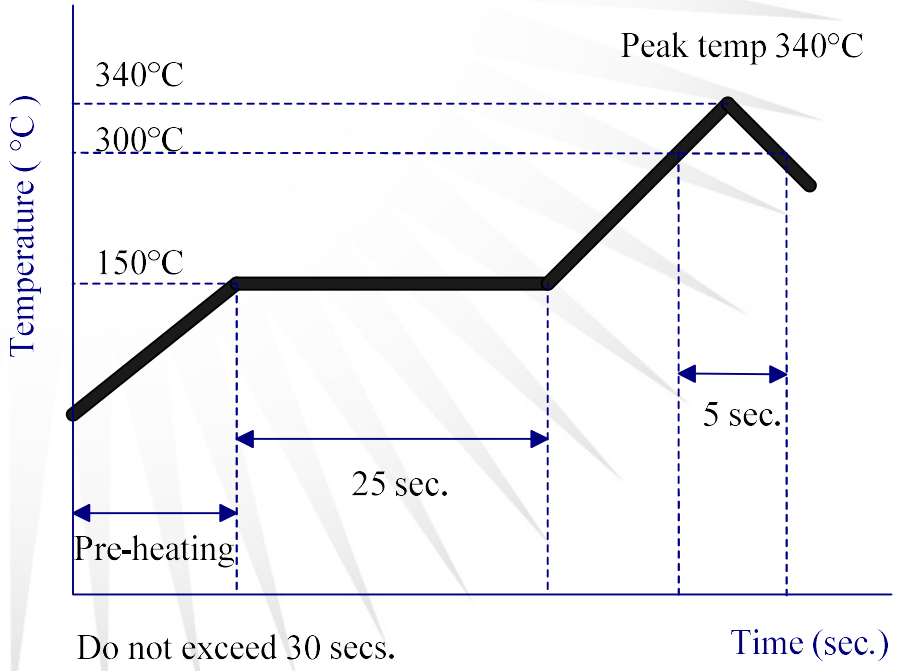
2.4 GHz E plan total radiation



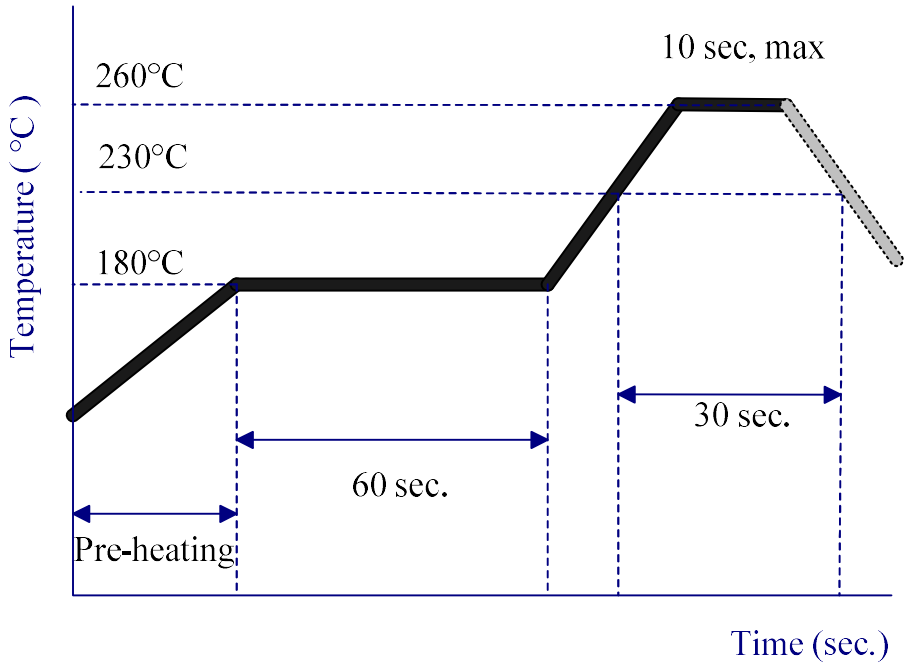
2.45 GHz E plan total radiation



Typical Soldering Profile for Lead-free Process

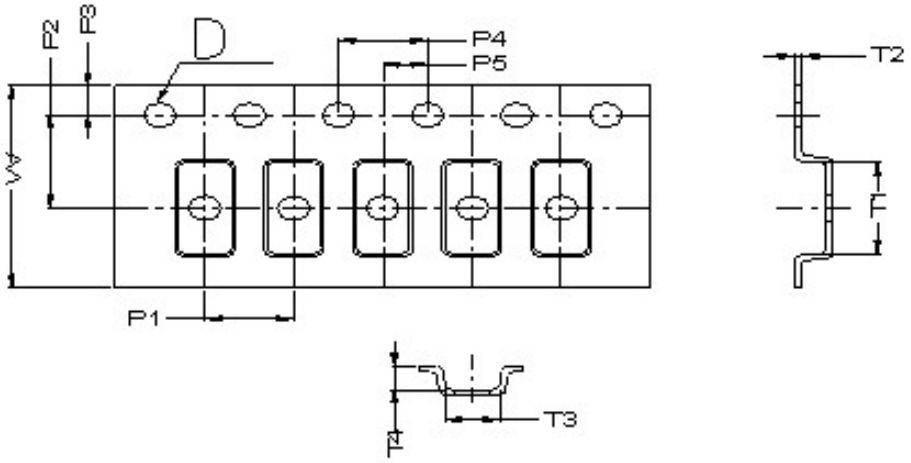


Reflow Soldering



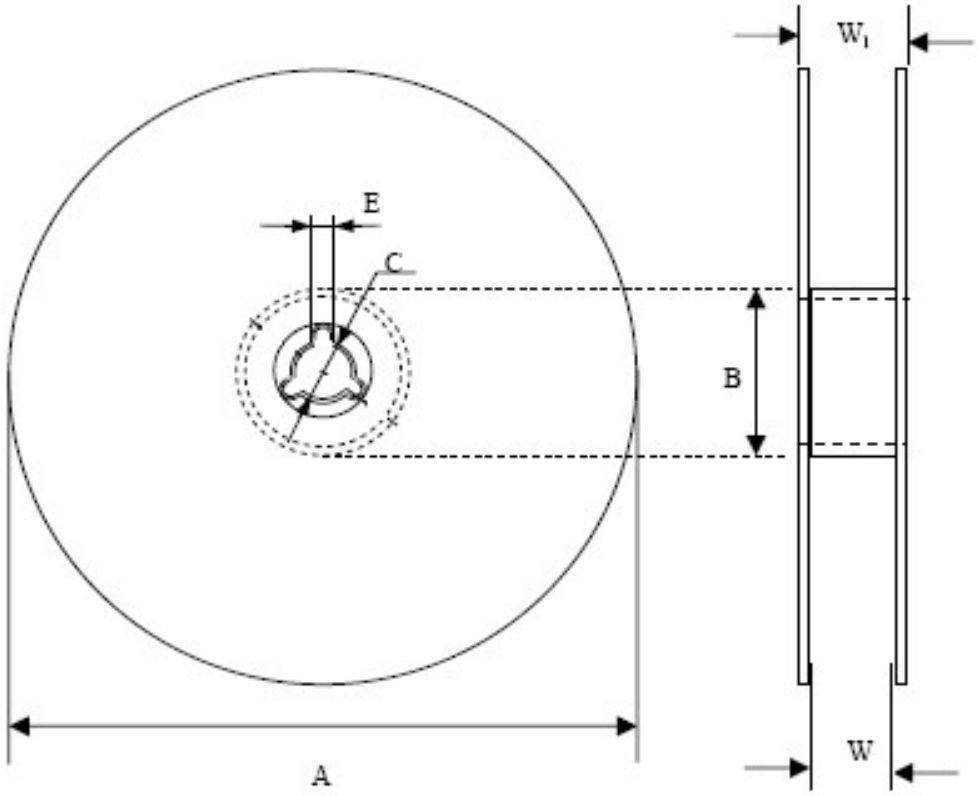
Packing

Blister Tape Specifications



Symbol	Dimension	Tolerance	Unit
W	12.00	± 0.30	mm
P1	4.00	± 0.10	mm
P2	5.50	± 0.10	mm
P3	1.75	± 0.10	mm
P4	4.00	± 0.10	mm
P5	2.00	± 0.10	mm
D	1.50	± 0.10	mm
T1	5.40	± 0.10	mm
T2	0.30	± 0.05	mm
T3	2.40	± 0.10	mm
T4	1.40	± 0.10	mm

Reel Specifications



Quantity Per Reel	Tape Width (mm)	A (mm)	C (mm)	B (mm)	E (mm)	W (mm)	W_1 (mm)
3,000	12	180±1	13.0±0.2	62±0.5	2.2±0.5	12±0.5	16±0.2